

SIXPENCE

DECEMBER 1944

# AMATEUR RADIO

THE  
OFFICIAL ORGAN  
OF THE  
WIRELESS INSTITUTE  
OF  
AUSTRALIA



Published by the Victorian Division

# AMATEUR-RADIO

INCORPORATING THE N.S.W. DIVISIONAL BULLETIN

Vol. 12 No. 12

December, 1944.

## FROM THE EDITOR'S PEN.

December issue of Amateur Radio means that another year has almost reached its end - a year in which Amateur Radio throughout the Allied World has added more and more record to its already full page of National Service.

We, the Wireless Institute of Australia in looking back can be justly proud of our record during the past year - in fact our achievements since the outbreak of war would not be surpassed by any other nation.

In review we see during the first years of the war the rallying to the Colours of the Hams, who due to their amateur activities were able to fill specialised jobs in Army, Navy and Air Force - jobs which would have taken the Services years to train men. The value of the Ham is proved conclusively by the high ranking positions held by Hams in the Services to-day.

Japan entered the conflict and moved closer and closer to our shores - the New South Wales Government were quick to see the advantage of incorporating the Ham into its civilian services, and so was born the Emergency Communication Network - we believe the first ever to be recognised by any Government in the world. From this beginning the Ham activity in N.S.W. has spread to the Sydney Harbour Patrol, and the most recent application of the Ham is to the establishment of a Bush Wires Net.

Governments in South Australia, Western Australia, and Tasmania also saw the value of the Ham for Civilian Defence, as is witnessed by the establishment of A.R.P. Communication Nets.

In Victoria however, no authority could be obtained for the establishing of a Communication network, but due to the ground work put into endeavouring to establish one, that Division in conjunction with the Forests Commission of Victoria have every hope in building a permanent Emergency Communication Organisation.

The Wireless Institute of Australia is as strong, if not stronger today than it ever has been, membership is on the increase and in fact rapidly approaches any pre-war peak.

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# AMATEUR TEST EQUIPMENT REQUIREMENTS

Charles C. Guin...VK3VO

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Before going ahead with this month's article it would be as well if a few remarks were made regarding queries from previous installments.

**OCTOBER** - Since writing the article on the Bridge, it was asked if any other tube could be used in place of those mentioned as none of them are obtainable in Melbourne at the present time. A 6G5 was then tried, but as expected, it was not quite as sensitive as the 6ML, good indication could be observed for fairly large differences of comparison. However poor power factor of the smaller capacities could not be noticed the same as with the 6ML..the 6G5 could give good results if the operator was patient. (Note 1 of uses should have been "using terminals 4 and 5 and 6 and 7"; the terminals 5 and 6 are joined by the selector switch and form a 'centre-tap'.

**NOVEMBER** - It would be as well to mention that the principle of the Transiltron is that of producing negative resistance between two grids in the case of Fig. 2 they would be suppressor and screen, and between suppressor and screen and grid and plate of oscillator in Fig.1.

It has been queried if 25% variation of the plate voltage is correct. Tests have found it to be so.

It will be seen from the circuits shown in November issue that two different types of tubes are used .. Fig. 1 pentagrid, and Fig. 2 penthode.

In the pentagrid type the plate terminal serves as a means of taking the output only, but the pentode type plate is also part of the oscillator circuit, therefore greater care must be taken in loading this circuit.

The 7V7 type is not available in quantity to civilians in Australia and characteristics are not generally known - although the 'Radiotron' Equivalent Chart shows the 6J7G as 'having electrical differences and base differences.' The following will show that they are entirely different.

Type	Plate V	Plate I	Screen V	Screen I	AC Plate Resistance	Trans-conductance.
7V7	300	9.6	150	3.9	300,000	5800
6J7G	250	2.0	100	0.5	Over 1 meg	1225

In the case of the 7V7 a bias resistor of 160 ohms is required whereas the bias for the 6J7G is given as a negative 3 volts.

One of the members at last month's talk intimated that a 6U7G had been used for this particular application, and if anyone is interested, details will be ascertained and published. See also October 1943 Amateur Radio.

Purtner to Fig 2. Three omissions are evident here:- they are -  
Line at bottom of 70 ohm resistor should show earth or chassis  
connection while adjacent condenser is 0.5. Plate supply is 150volts.

MULTIMETER ... The promised description of a signal tracer (actually  
the circuit diagrams and explanatory text) will have  
to be held over until a later date. However in the meantime you  
are recommended to read that excellent article by VK2VX in February  
and March 1944 Amateur Radio.

### INDICATING DEVICES

V.T.V.M -- Here again you are referred to previous articles in "AR"  
the most recent being November to January last by VK3VX  
and a wide choice is given. No particular one is pointed out be-  
cause each Ham has his own 'pet' ideas, and available gear.

UNIVERSAL METERS - Hundreds of articles have been prepared on "Multi-  
meters" and Ohmmeters and it would be safe to say  
that no ham shack is complete without one of these instruments. It  
would also be safe to say that you would already be in possession of  
one.

It is well to mention here that care must be taken to apply  
each of the above mentioned type of meter to its appropriate measure-  
ments; that is for example -

You want to measure the negative bias voltage on the grid of a  
valve under actual working conditions. The obvious way is to apply  
an accurate multimeter to the cathode resistor, select the voltage  
range, and read the indicated figure -- but wait -- if for instance  
you have the instrument set to read 10 volts full scale, and the  
assumed voltage is 10 volts across the resistor (Meter also assumed  
1000 ohms per volt) then 0.95 milliamperes is consined by the meter  
and associated resistor (being in parallel with the bias) and the  
meter will indicate say 9.5 volts. Larger discrepancies occur in  
lower current circuits.

You will say that such accuracy is not necessary for amateur  
requirements, but this example is only one - what about measuring  
AVC where high resistive circuits are employed? It is here that a  
VTVM must be used so that little or no current is taken from the  
circuit under test.

As regards the ohmmeter portion of the meter. Here you are  
referred to the bridge at the beginning of the article. After use  
of the bridge you will rely on an ohmmeter merely to indicate  
shorts or open circuited components.

J. E. Potts in an article in October 1943 Amateur Radio gives  
practical circuits for Electronic Voltmeters.

MAGIC EYE -- The 'magic eye' type of indicator has been used in all types of apparatus, and is less expensive than a meter with the added advantage that, within reason, it cannot be overloaded like the defunct meter with the bent needle.

December 1941 gave a circuit of a wide range tuning indicator with from almost zero to 220 volts operating range - this with the addition of a few components and circuit will be given later.

A later article will also give details of the use of this type of indicator in calibrating audio frequency oscillators so that the desired frequency can be accurately 'aligned' to that of the standard available.

The value of the magic eye as an INDICATOR cannot be overstressed.

OSCILLOSCOPE - Here again many articles have appeared on oscilloscopes, but none in 'Amateur Radio.' It is not intended to give an example in this present series, as CRO tubes are not available at present. Immediately the conditions warrant, an article will be prepared on a simple 'scope. Suffice to say that this type of indicator is the 'ultimate' as it indicates simultaneously, if necessary, the magnitude, form, phase and frequency of the wave or voltage being measured; whereas each of the other types considered indicate magnitude only.

VALVE TESTS - Most of us are aware that the commercial valve tester is only an omission test, this is, the filament is heated to correct temperature, grid voltage applied and varied and all other elements paralleled and the plate current read, which in effect is only an indication of the state of the grid and cathode. Therefore the only real tube test, without complicated apparatus, is to measure with a VTVM the actual applied voltages, and with an accurate milliammeter the actual currents of each element in turn. All these tests to be carried out whilst the valve is in the apparatus, and the readings obtained, compared with the manufacturers figures.

Unfortunately different tube makers sometimes vary the characteristics, (this is seldom) and slight inaccuracies in physical construction may give slightly misleading results. However, for all practical purposes the above mentioned tests should give the required results and a true indication of the state of the tube.

CONCLUSION - From the foregoing articles, it seems that we have quite a "Conglomeration" of apparatus, which is a far cry from the proverbial screwdriver and pair of pliers. Just as in the old days when a peal amp in a turn of wire, and a little common sense was all that was necessary to tune a transmitter, you will find that each piece described has its own use. The line up then is as follows:-  
(1) Bridge and indicators. (2) Multivibrator. (3) Oscillator.  
(4) Signal Tracer. (5) VTVM. (6) Universal Meter. (7) C.R.O.  
(8) Valve tests.

If necessary several of them could be built up as dual units, for instance 1.4.5.6 and 2.3 or 2.3.5. can be combined.

THE TECHNICAL LIBRARY

THE RADIO AMATEUR'S HAM BOOK...A.R.R.L...21st (1944) Ed. 480p..12/6-

The set up and subject matter of the latest ARRL Handbook follows closely the immediately previous editions with minor revisions and additions here and there.

The Handbook is divided into four main sections, including in all 22 chapters. Section one is introductory and covers the nature and history (from the American viewpoint) of Amateur Radio. Section two is titled "Principles and Design" and deals with transmitters, receivers and antennas from first principles. This is followed by Section three - Construction and Data, embracing the practical side and including also such items as Carrier Current, Measuring Equipment, WRS and Workshop Practice. The final Section deals with operating and Traffic Handling.

The large amount of padding which has long been a feature of the ARRL Handbook is still apparent in this addition, in the way of re-laying procedure etc; but fortunately this has been included additionally to and not at the expense of the technical information.

In the back of the book is the catalogue section which has now reached 174 pages and is almost as interesting as the rest of the book.

RADIO HAM BOOK .. 9th Edition (1942) 640 pages .. 16/-

Formerly the Jones Handbook, but now compiled by several authors this edition has been available for some time, but it is considered fitting to mention it in this review with its contemporary.

From a rather haphazard start around 1935 the Radio Handbook has grown from an assorted collection of more or less disjointed paragraphs into an orderly and well presented manual for the Radio Amateur. It is seen from the title page that Mr. Jones has faded out of the picture, and a perusal of the subject matter shows a lack of idiosyncracies and strange ideas, which facts may be, of course, co-incidental.

The material is covered in the course of 28 chapters which deal with all the usual subject matter of interest to the Ham and include special chapters on Transmitter adjustment, C.R. 'Scopes and BCL interference.

As a reference book for the Ham the Radio Handbook is probably the best buy in the field, and it is interesting to note that this edition although two years old is still ahead of its two contemporaries in its information of VHF and MF; two subjects which have become of top-ranking importance these days.

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Now that we have reviewed each of the three leading Handbooks it may be pertinent to state in what respect each outshines the other. Radio Amateur's Handbook A RRL--Antennas..Best Handbook for Beginner Radio Handbook...VHF and MF..Best reference Handbook for the Ham. Amateur Radio Handbook. R.SCB..Crystal Filters...A useful guide to English Ham practice.

Copies of books supplied by courtesy McGills, Melbourne.

### THE SHAPE OF THINGS TO COME

Under the above heading in a recent issue of the "Gramophone" includes some interesting comments regarding the likely post war trends of recording technique. The comments are mainly based on discussion at a recent meeting of the Institution of Electrical Engineers on the merits and demerits of various forms of recording.

Despite the age of the disc system, it offers a great many advantages, being easy to handle, is self-contained and compact, and is fairly easy to process. It was agreed that the main improvements needed for the disc system are better signal to noise ratio, intensity range, frequency range, freedom from non-linear distortion constancy of results and longer playing time.

In pre-war days the normal top frequency limit of records was about 6000 cycles per second, but even this comparatively low limit could seldom be utilized on account of the high surface noise of the discs. The development of cellulose nitrate coated discs, however, has allowed the frequency range to be extended to about 12,000 c/s with at the same time, comparatively low noise level.

Suitable materials for discs were discussed and it was felt that there should be many possibilities among the plastics developed for war-time uses. Primary necessities are cheapness, ultimate strength and stability and easy flow properties in the press. With regard to the use of fillers, it was noted that this practice could be dropped provided that needles complying with rigid specifications could be provided. The present main use of the filler is to grind the points of the variety of types of needles not those days, to a point which will suit the groove shape used.

It is noteworthy that the preferred maximum level given for a shellac type disc was plus 25db. The range of most of the shellac type records heard today averages about 37db, whereas with the new records a range of up to 75db can be obtained. This latter figure means that there will be no necessity to employ compression during recording, and in consequence far greater realism should be obtained.

Regarding the optimum groove shape, it was stated that experiments have shown that a groove having a depth of 0.0029 ins., a width of 0.0067 ins. and an included angle of 83 degrees should be used. This automatically fixes the needle shape which should have a hemi-spherical end of 0.0025 in radius and a 30 degree taper. Present needles have points varying from 0.0015 in to 0.0024 in, hence the need for grinding by the filler.

A number of records were played with a very low down thrust type of pick-up and using in the amplifier a filter circuit that enabled the response to be cut at will at 6000, 8000, 10,000 or 12,000 C/s. This demonstration proved only too clearly that we accept very mediocre quality with even the best present day discs which cut off at 6000 C/s.

# Transformer Problems

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A further interesting demonstration was a comparison of disc recording and film recording. The general consensus of opinion was that the disc proved slightly the better, mainly on the score of better transient response.

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### NEW SOLDER FLUX.

Fluxing agents such as rosin and zinc chloride have been found unsatisfactory in many applications. While zinc chloride is a powerful flux, it tends to cause corrosion unless the soldered parts are thoroughly washed to remove the excess flux after soldering. Although rosin is free from this fault, it is not sufficiently active when used with such metals as steel. It has been found that lavulinic acid, derived from common starch, is as much more active flux than common rosin. When blended with rosin, this flux can be used in soldering steel parts without the necessity for subsequent washing.

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The Magazine Committee desire to extend to all readers Compliments of the Season with their sincere thanks to all who contributed articles during the past year.

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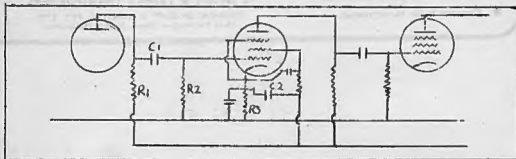
Alec H. Clyne..VR3VK

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One of the difficulties associated with multi-stage, high gain voltage amplifiers in audio work is the pressure of low frequency oscillation, which makes itself apparent in the form of 'motor-boating.' This is caused mainly by the impedance of the power supply as measured across the output terminals of the power pack looking towards the rectifier. Voltages developed across this impedance by the final stage are fed back via the HT leads to preceeding stages and bring about oscillation.

Two methods have been employed in the past to combat motor-boating firstly by cutting the low frequency response, which is not always admissable, secondly by the use of decoupling filters, which become less effective the lower the frequency and also do not always achieve the desired result.

A very simple expedient evolved by Wen-Yuan Pan, Assoc I.R.E. is shown in the diagram. The only addition to the usual circuit is the condenser C2 which brings about neutralisation of feed-back:



by introducing a voltage across the cathode resistor of the stage which exactly balances out the feed-back voltage appearing on the grid of the same stage due to power supply impedance. For perfect neutralisation the following equations must be satisfied.

$R_p$  is the plate resistance of preceding tube.

The above equations are independent and both must be satisfied. Also it is important to note that neutralisation by this method is independent of frequency, which means that power supply hum is reduced to the same extent as is regeneration since both are caused by undesired voltages appearing across the power supply output impedance.

(Continued on page 16)

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The production for the past 5 years of the now famous AR7 Receiver for the War requirements of the R.A.A.F. have led to new designs of COILS AND I.F.T's by KINGSLEY.

Announcements of the production of New Perma Clad Coils, Perma Tuning Units, Crystal Filters and Miniature Equipment, will be made in this space from time to time.

In the meantime we still have a job to do FOR the Services.

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There are times when writing this column is a job for one of these strong silent men, a much stronger man than I ... and these times are when, as at present, only one solitary batch of notes from all the hams scattered about have arrived, and its time for me to scrounge or other words two pages. If it was a waste in wartime I would suggest the Magazine Committee publish two pages adorned with an epitaph and tombstone!!!!

The Magazine staff have given me a little longer to get some notes and the extra time has passed so as they expect "something" here goes.

The red-headed Sailor Syd Clark, the one and only correspondent - again at Lae - his sailing course apparently being over - or because they possibly caught him at his "training" and reckoned there was a war on - is coming back from Madang Syd flew up the Markham Valley and landed on one of the strips at Madzab for breakfast. The last part of the trip Syd made as a "Combined Operation in a Jeep" with an R.A.A.F. and Army Officer.

Of course there was the "usual ham" at Lae in the shape of 30T Bob Stevens (he seems to "live" in New Guinea - that chap - 2YC) and Ted Stevens a VK5. Most of Syd's Ya nk Cobbers had moved out and a new crowd had taken over but there are sure to be some hams among them somewhere.

30P - P/O Tel. Frank O'Flyer usually works on the bridge of the R.M.A.S. Australia, but it must have been one of the times "he wasn't there" when she was hit, and a casual letter from him the other day in which he says he "wouldn't have missed the Philippines for worlds. Well, well, what a taste. As he didn't say GIG was wounded, I guess both our hams got through OK. Frank - I reckon Wilf - 2 ALF - is a bit "key" where these ships are concerned - hi!

Harry Caldecott - VK8A - now an Officer in the Air Training Corps was at our last W.I.A. Meeting. It's quite a long time since he was able to get in to a meeting.

ARF reports - Newly promoted Captain Jack Wooster (4V) has left his job as R.M.O. at Rockhampton and gone to Thursday Island. Called in at Boyon a mile back and met a ham whose call I don't is 6MZ working for the R.A.A.F. Only other ham here with me now is Tom Shoring - 4SH. Recently soon passing through here - 5PA - Brian Anderson on his way back to Darwin. 4S - "Calla" Sharland of little ships is still picking his heels in South Africa waiting a transfer back to Australia after being away for almost four years. 4LD having a good time in VIB taking National Relays and recording programmes for Short Wave Transmission to A.S.A. etc. Has just built himself a new super (9 tubes) after leaving 4 RM's!!!

The Victorian President, Herb Stevens recently received a letter from Sgt. Geoff Terry VK3 A, who at present is a member of one of Australia's "Small" Jiffy Boys. To quote from his letter "I received a message from the WIA a few days ago - apparently it has been travelling for about three or four months. The envelope is covered with addresses. Anyway its something about rejoining the Institute, so am enclosing the Herewithal on the strength of it.

I can't give you much hope about the setup here without breaching the security regulations, but I can say we are stuck up here in this God forsaken hole in Dutch New Guinea - am running a shore station that keeps in touch with our tubs at sea - all CRP stuff - 10 to 20 watts.

I went out on a trip recently and the vessel foundered on a reef was in the water for seven hours before being picked up. I pumped out an SOS on phone and G until the set gave out - it was heard fortunately - that's the first and last SOS I ever want to send out.

There's another Ham in our show, Ken Matthews VK3IC (what about a note from you OM ...??), he's over at Darwin and have a QSO with him occasionally."

Sometimes Hams, although they have known one another in pre-war days forgot what the other looks like, particularly when in uniform. We have a story to relate regarding two well known VK3 Hams. It seems that some big wigs were being conducted on a tour over an Army Signal station ... Wing Commander Bill Grono 3WG in looking round spotted a humble Sargeant whom he thought he recognised, said Bill, "Haven't I seen you before some place? Weren't you in the RAAF at some time?" "NO," said the Sargeant, "I haven't been in the Air Force, but I was 3VZ before the war."

Sgt. Fred Smith 3PR has been spending some time on leave in VIM, and turned up at the last VK3 Meeting. Unfortunately Fred was unable to tell us where he will be going to when he reports back. So Hams anywhere in the Pacific Zone may meet him sometime.

Cpl. Ron Higginbotham 3RW spends most of his free time these days at ATA. He believe in the pursuit of some sort of ticket. Here's the best of luck Ron when the big day comes off,

VK3OC reports receiving a card from Snow Campbell 3MR some weeks ago. According to the information contained therein, Snow is still in the same camp as reported in these pages some time ago. That camp was somewhere near the Polish Border.

VK3LX had a visit from Cpl. Jim Stevens 3ZK last week. 2YC reported a visit by the same chappie to his QRA a couple of months ago. (Readers will note that 2YC is NOT writing this paragraph) Jim 3ZK after that visit is amazed that the populace around 2YC's place of business survive. (We'll see what that brings forth...) And so chaps that's the lot for this month & if I don't get any letters there will be no notes next month -- Send to J.B. Corbin, 78 Maloney St. Castlakes..... Mul092

DIVISIONAL NOTES

At the November General Meeting of the Division the Chairman in declaring the Meeting open for General Business extended a welcome to Lieutenant Jack Stiller W3CB, EG, Newnan - VIRGP and Mr. Phil Crocker.

Some discussion took place regarding the location of Federal headquarters at the present time in view of the rapidly approaching time when it will be necessary to make various representations to the Dept. The Divisional Council were appreciative of the great work carried out by the Executive whilst located in U.S.A. but felt that quite a deal could be accomplished even now for the benefit of Post War Amateur Radio should it be possible for personal contacts to be made. The Federal Secretary stated that the Executive had now completed three years of office in New South Wales. Actually the Headquarters Division was determined by the Annual Convention in pre-war days to only provide being that it could not be located in any State for more than two years without reference to the States.

The Federal Secretary supported by the Federal Chairman agreed with the VLS Divisional Council and it was unanimously decided that VLS be asked to act as Headquarters Division immediately.

During the month a very welcome visitor was Bob Anderson W3WT, Secretary of the VLS Division. Bob has given an opportunity of inspecting the Norfolk Control Station and meeting quite a number of VLS's. Quite a number of matters were discussed and it is hoped that this will be the forerunner of many other visits.

Members will regret to learn that both Will Jones VK2YP and Les Tanner VK2ABL are both inmates of Sydney Hospital. Both these lads would appreciate a visit from any other amateurs. Visiting hours are between 7 and 8 pm each night whilst it is advisable that you contact the hospital for times during the day.

Mrs. Rita Bryan and family wish to convey to all Members of the Institute and amateurs generally a message of thanks for all telegrams and messages of sympathy upon the passing of RJJ.

Upon conclusion of General business a very interesting talk was given by Jack Smucker V6 MOY on the work that he is doing. Of particular interest was the information purporting to be "straight from the horse's mouth" regarding post war frequencies. We hope you're right Jack, but!

VK4GF told us about ham radio way up North. We understand that he and VK4RW had a flourishing radio business!

The Christmas meeting of the Division will be held at Y.M.C.A. Buildings Room "K" on Thursday 21st December.

The Chairman and Council of the Wireless Institute of Australia, New South Wales Division wish amateurs everywhere the compliments of the Season.

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BRITISH CENTRE

During the past few years it has been the policy of the New South Wales Division of the Institute to hold a function in aid of various Patriotic Funds. These entertainments have usually taken the form of a Picture Night.

At the 1943 December Meeting another function was inaugurated namely a "Pound Night" each member being asked to bring along something to eat or drink. The whole of the arrangements were under the direction of Mr. Russ Miller and upon conclusion the evening was voted an overwhelming success.

The question of providing funds for British Centre and the Annual Pound Night was discussed at length at the November General Meeting and it was unanimously decided that the Christmas Meeting of the Institute would combine the two functions.

Mr. Morry Lusby VK2W has just returned to Australia after two years in America and England. Whilst in those countries he made very good use of a Movie Camera. He has very willingly volunteered to screen these films on "British Centre Night." Morry, who has enjoyed the hospitality of English homes, has a very soft spot in his heart for our English cousins, was very pleased to be given the opportunity of making some repayment if only in an indirect way.

Catering arrangements will be in the hands of Russ Miller, and you are asked to contact him either at WG632 or UJ5012 and let him know what you intend bringing along in the way of eats, or drinks.

An earnest appeal is made to every member of the Institute to be present at this function. Every Australian Amateur worker of the name is honor bound to make the stay of every British Amateur in this country an enjoyable one. Some of us will be able to take them into our homes. Others through circumstances cannot do this. There is an opportunity to help indirectly.

Unfortunately it is an English characteristic to belittle ones effort and it is quite safe to say that at the Armed Forces of Britain have taken more hard knocks and carried out the most hazardous tasks with as little glorification or self commendation, than any other of the Allied Nations without exception.

An admission charge of 2/- will be made and you may bring along as many friends as you wish. If you cannot attend, why not send along a small donation?

Don't forget, Thursday, 21st December, Room "K" Y.M.C.A. Bldgs.

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Official approval has now been granted for the operation of the Bushfires Net in New South Wales. There has been a slight alteration made with respect to the frequency to be used. Previously it was stated that 3.1 mcs would be the frequency but this has now been altered to 3.15 mcs.

As mentioned in last issue, Young, Pubbo and Wagga are the three teams selected for initial operation, and at the time of writing Young and Pubbo are racing neck and neck to have the honor of being the first Net to go into operation. Unfortunately Wagga got away to a late start.

As far as equipment is concerned there will be two types of different set-ups. The Truck Set which will be vibrator powered, uses a 6J7 or equivalent type, as a Pierce Crystal Oscillator driving an 807. The P.A. is modulated by a 6J7 driving an EL3. The Modulator section also acts as the audio output of the receiver. The receiver is a superhet using fixed tuning for the Broadcast band whilst the 3 mc band is covered by a small capacity two gang condenser.

The Pack set uses a P.P. crystal oscillator with a T.R.F. Receiver is used, the audio end acting as modulator.

YOUNG. The gang at Young consists of 2TC, 2TA, and 2YA with Jim Taylor 2TC as Section Leader. These lads have roped in a few more assistants and it won't be long before they are on the air. The liaison between the Radio and the Bushfire Brigade is perfect, reason being that Alan Thackoray VK2TA is Deputy Captain. It would be fitting if Young were to be first on the air as 2 TC suggested the idea some few months ago. Since then we've been using a bulldozer to get through the red tape.

PUBBO. In this district Max Moore VK2LL is Section Leader ably assisted by Bill Brook VK2ACT and Tom Stroud VK2AMR. Max is very keen and thinks nothing of putting a few trunk calls through to 2EI occasionally. That's the spirit boys, and it is my regret that equipment doesn't come along as quickly as you would like it. This should help. When the E.C.N. was formed permission was granted on 21st July. The first transmission didn't take place until November. Nearly four months. You won't have to wait that long. By the way Bill, how are the bees?

WAGGA. Remember 2YT chaps and the way T.D.Y used to work the 1K in the good old days. Well gang Doug 2YW tells me that sister Jess is now the proud mother of two sons. Time marches on! Unfortunately the hams at Wagga other than 2YT lived in other places in 1939 hence Alf Moya 2BW and Roy Heiman 2EH didn't receive the circular or didn't hear about the Bushfires Net until they saw mention of it in the mag. Hence the late start.

With all wartime emergency Nets equipment is the bugbear, and one of the outstanding features of the Bushfires Net to date has been the manner in which the city experimenters have come forward and helped the country boys get going. Splendid ham spirit has been shown.

### EMERGENCY COMMUNICATION NETWORK DOINGS.

The burning question at the moment is the identity of the "new" operator at VL2JL. Central were shocked recently when a "strange voice" told them how they should send messages. It is believed that the "Tunnor" at Central identified the voice immediately! Ahem!

Network stations still continue to function 100% and "6MOV" was quite pleased to have a "ragchev" recently. Wot it was quite a change from the kilowatts.

### SYDNEY HARBOR PATROL

It is anticipated that two more boats will be operating shortly and this will make exercises more interesting. Practices now take place twice a month when all boats participate. Full information from Mr. Ray Weingott LA 3763.

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### VICTORIAN DIVISION

It has been decided that in each month's notes the call signs of those attending the divisional meetings be published, with the view that other members or non-members as the case may be, may perhaps be interested in meeting one particular Ham, and seeing that he attends more or less regularly, a note to the effect that he does so, may induce others to attend the meetings.

At the November meeting those present were:- VU3WQ, VU3WR, VU3RN, VU3IK, VU3QS, VU3BO, VU3IN, VU3OC, VU3SZ, VU3HG, VU3YL, VU3WE, VU3X, VU3HY, VU3JY, VU3JO, VU3TY and Mr. J. K. Ridgway.

In endeavouring to arrange more attractive meetings, Mr. R. Kinnear VU3IN has offered to put on movie shows complete with sound equipment. It is intended that these shows will be as educational as possible as there are quite a few films about which deal with radio and an endeavour is to be made to contact the people responsible in a hope that these films will be made available. An appeal is made to anyone who may have access to this type of film to let this Division know if they can be made available for one or more of these shows. The film required is the 16 mm size with or without sound.

The first of these shows has been arranged for the February meeting which will be held on Tuesday February 6th, and everyone interested is invited to attend. The popularity of these shows will depend on the number held, so it is up to members to show their appreciation of the offer to roll up in vast numbers.

The hopes of this Division establishing an Emergency Communications Net in conjunction with the Forests Commission is still fully maintained, as the first station is now receiving consideration of the authorities. The result of the circular was perhaps disappointing



but nevertheless the information gained was of utmost value. Unfortunately in some areas Hams remaining are unable to supply the full amount of gear to complete a station. At the November meeting the matter was discussed, and one member present offered a receiver to complete one installation. Another country member has offered items of speech equipment for the same purpose. These offers have given rise to the idea that possibly there are other members, not included in the scheme who may desire to offer certain items of their idle equipment, so that other stations may be completed. If anyone is desirous of doing so would they contact Mr. T. J. Hogan, VK3XX.

At the last meeting a lengthy report was read from FIO. They request that each division compile a complete list of Hams on service, decorations won, Hams who have paid the Supreme Sacrifice and all relevant details. This is a step towards the post war planning, and also to write the history of the Ham in his service to his country. Everyone is asked to forward to their division or to FIO a ny information about himself or about any Ham, member or non-member, he may know of. This will help considerably.

Victorian Members are asked to note that the December meeting will be held on Tuesday 5th December. The January meeting will be on 2nd January also a Tuesday, while the February meeting will be on Tuesday the 6th.

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#### Neutralisation of AF Regeneration and Hum

Reduction of motor beating and hum of the order of 40db are easily attainable with this method.

In practice the correct value of C2 can most conveniently be found by trial and will usually be from 0.1 to 0.5 mfd.

The formulae mentioned in the previous page is as follows:-

$$\frac{C3}{C2} = \frac{R1}{R2} \quad (1 + \frac{R2}{Rp})$$

$$\frac{C1}{C2} = \frac{R3}{R2} \quad (1 + \frac{R1}{Rp})$$

Rp equals the plate resistance of the preceding tube.

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WANTED TO BUY: SELL: OR EXCHANGE

(Sixpence per line)

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WANTED URGENTLY .. Valves and/or components parts to build 250/300 watt audio PA unit .. Sponsorship will be given to obtain release of gear from PMG custody ... "Fidelity"

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# THE WIRELESS INSTITUTE OF AUSTRALIA



Divisions of the Wireless Institute of Australia exist in every State of the Commonwealth. The activities of these Divisions are co-ordinated by Federal Headquarters Division, the location of which is determined from time to time by ballot.

## Present location of F.H.Q. :— New South Wales

**Federal President :** F. P. DICKSON, VK2AFB.

**Vice-President :** H. F. PETERSON, VK2HP. **Federal Secretary :** W. G. RYAN, VK2TI.

**Councillors :** C. FRYAR, VK2NP ; W. J. McELREA, VK2UV

**Official Organ :** "AMATEUR RADIO"—Published by the Victorian Division.

## VICTORIAN DIVISION

**191 QUEEN ST., MELBOURNE**

**Postal Address :** Box 2611W, G.P.O.

**President :** H. N. STEVENS, VK3JO

**Secretary :** R. A. C. ANDERSON, VK3WY

**Treasurer :** J. G. MARSLAND, VK3NY

**Councillors :** I. MORGAN, VK3DH; T. D. HOGAN, VK3HX; R. J. MARRIOTT, VK3SI; C. QUIN, VK3WQ; A. H. CLYNE, VK3VX; H. BURDEKIN; K. RIDGWAY.

### Subscription Rates

Metropolitan . . . . .	£1 per annum
Country . . . . .	14/6 per annum
Defence Forces . . . . .	7/6 per annum

Subscription includes "AMATEUR RADIO"

### Meeting Night

First Tuesday in each month at W.I.A. Rooms,  
191 Queen Street.

Visiting Overseas and Interstate Amateurs are welcome at meetings and they are invited to communicate with the Membership Secretaries :

T. D. HOGAN . . VK3HX . . UM1732

J. G. MARSLAND VK3NY . . WF3958

## WESTERN AUST. DIVISION

**C.M.L. Buildings,**

**ST. GEORGE'S TERRACE, PERTH**

**Postal Address :** BOX N1002, G.P.O. PERTH.

**Secretary :** C. QUIN, VK6CX.

## NEW SOUTH WALES DIVISION

**Registered Office :**

**21 TUNSTALL AV., KINGSFORD**

**Telephone :** FX3305

**Postal Address :** Box 1734JJ, G.P.O., Sydney

### Meeting Place

**Y.M.C.A. BUILDINGS, PITT ST., SYDNEY**

**President :** R. A. PRIDDLE, VK2RA

**Vice-Presidents :** H. F. PETERSON, VK2HP ; E. HODGKINS, VK2EH.

**Secretary :** W. G. RYAN, VK2TI

**Treasurer :** W. J. McELREA, VK2UV.

**Councillors :** N. GOUGH, VK2NG; E. TREHARNE, VK2AFQ; P. DICKSON, VK2AFB; C. FRYAR, VK2NP; R. MILLER

### Subscription Rates

Full Members . . . . .	10/6 per annum
Service Members . . . . .	7/6 per annum

The N.S.W. Division meets on the third Thursday of each month at Y.M.C.A. Buildings, Pitt St., Sydney and an invitation is accorded to all Amateurs to attend. Overseas and Interstate Amateurs who are unable to attend are asked to phone the Secretary at FX3305.

## QUEENSLAND DIVISION

**Box 1524V, BRISBANE**

## SOUTH AUSTRALIAN DIVISION

**Box 284D, ADELAIDE**

## TASMANIAN DIVISION

**BOX 547E, HOBART**